

Marked-up version of Original Abstract

An intake air amount control system for an internal combustion engine, which is capable of ensuring high robustness and improving controllability in intake air amount control, to thereby improve drivability and reduce exhaust emissions. A control ~~system 1~~ system of an internal combustion ~~engine 3, engine,~~ which variably controls the amount of intake air drawn into cylinders ~~#1 to #4~~ as desired via a variable intake valve actuation ~~assembly 40~~ assembly includes an ECU 2. The ECU 2 calculates a cylinder intake air amount G_{cyl} and a target intake air amount G_{cyl_cmd} (~~step 16~~), identifies, based on a controlled object model ~~[equation (2)]~~, a vector θ_s of all model parameters of the controlled object model with an identification algorithm ~~[equations (8) to (13)]~~, calculates a target auxiliary intake cam phase θ_{msi_cmd} based on the vector θ_s with a sliding mode control algorithm ~~[equations (15) to (21)]~~ (~~step 80~~), and controls the variable intake valve actuation ~~assembly 40~~ assembly according to the target auxiliary intake cam phase θ_{msi_cmd} .

REMARKS

The Office Action dated May 2, 2008, has been received and carefully noted. The Abstract has been amended to correct informalities noted therein. It is respectfully submitted that no new matter is being added.

Applicants appreciate the courtesies extended to Applicants' representative during the telephone call on May 27, 2008. Applicants' representative contacted the Examiner to confirm the May 2, 2008 Office Action ("Office Action") was a Quayle Action. The Examiner indicated that the Office Action was a Quayle Action and the Office Action Summary should have been marked accordingly. Accordingly, Applicants are responding to the Office Action as a Quayle Action.

The Office Action indicates that the Abstract is objected to because of minor informalities therein and Claims 1-19 are allowed. The Abstract is amended to obviate the objection. Enclosed herein are a Substitute Abstract and a marked up copy of the originally filed Abstract indicating the changes made thereto. Applicants respectfully request withdrawal of the objection.

Information Disclosure Statements

Applicants respectfully note that Information Disclosure Statements (IDS), a Form PTO/SB/08a listing references cited by the IDS, and the references themselves were filed on December 16, 2005, October 9, 2007 and May 20, 2008. Applicants note that the Forms SB/08a attached to the May 2, 2008 Office Action have not been completely initialed by the Examiner indicating that the Examiner has considered all the references cited in each IDS. As such, Applicants respectfully request that any subsequent communication from the Patent Office include the Form PTO/SB/08a from

each IDS initialed by the Examiner confirming the Examiner's consideration of the references cited in each IDS. Copies of the PTO SB/08As are attached for the Examiner's convenience.

Accordingly, it is respectfully requested that the objections be withdrawn and a timely Notice of Allowance be issued.

Should the Examiner determine that any further action is necessary to place this application into better form, the Examiner is encouraged to telephone the undersigned representative at the number listed below.

In the event that this paper is not being timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account Number 01-2300, referencing Attorney Docket Number 108419-00076.

Respectfully submitted,



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Enclosures: PTO SB/08a (3 forms)